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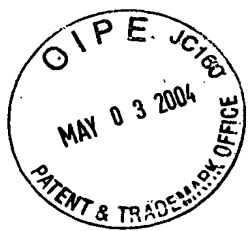
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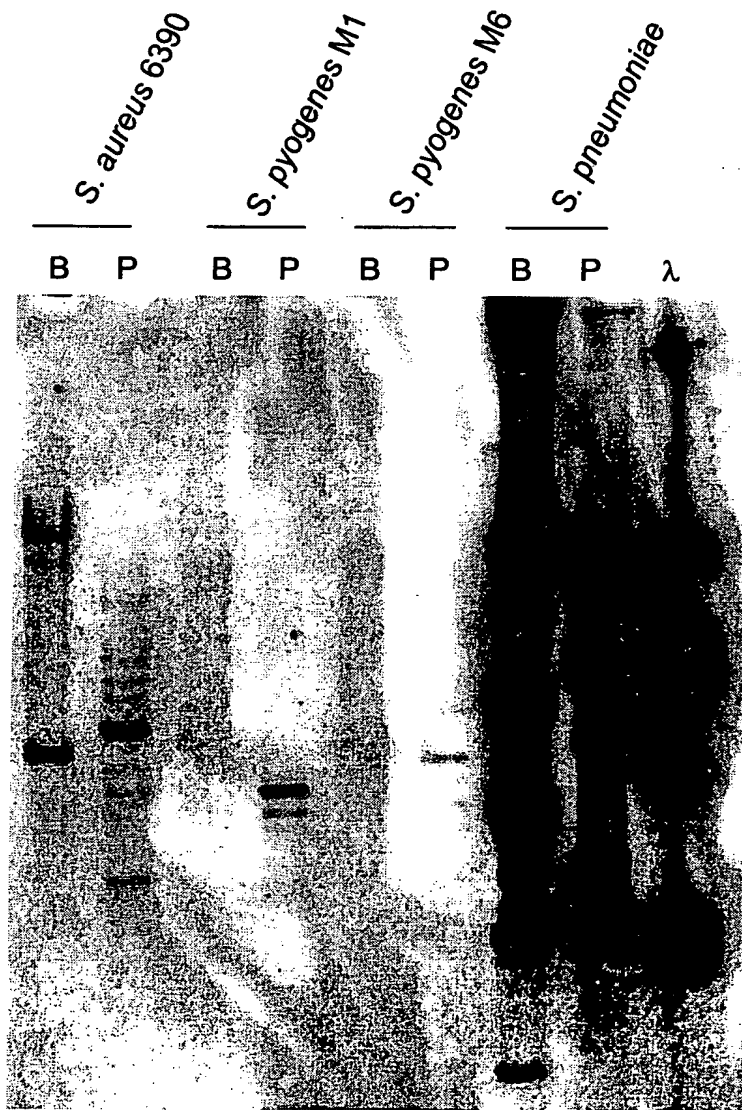
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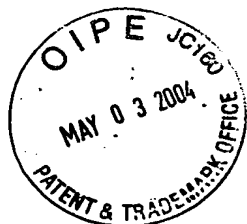
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**Figure 1**





**Figure 2(a)**

		10	20	30																											
1	V	K	K	T	Y	G	Y	-	I	G	S	V	A	A	I	L	L	A	T	H	I	G	S	Y	Q	L	G	K	H	H	Gas36.pro
1	V	K	K	T	Y	G	Y	-	I	G	S	V	A	A	I	L	L	A	T	H	I	G	S	Y	Q	L	G	K	H	H	Gbs36.PRO
1	M	K	I	N	K	K	Y	L	V	G	S	A	A	A	L	I	L	S	-	-	V	C	S	Y	E	L	G	L	Y	Q	Pneumo Sp36.PRO
		40	50	60																											
30	M	G	S	A	T	K	D	N	Q	I	A	Y	I	D	D	S	K	G	K	A	K	A	P	K	T	N	K	T	M	D	Gas36.pro
30	M	G	L	A	T	K	D	N	Q	I	A	Y	I	D	D	S	K	G	K	V	K	A	P	K	T	N	K	T	M	D	Gbs36.PRO
29	A	R	T	V	K	E	N	N	R	V	S	Y	I	D	G	K	Q	A	T	Q	K	T	-	-	E	N	L	T	P	D	Pneumo Sp36.PRO
		70	80	90																											
60	Q	I	S	A	E	E	G	I	S	A	E	Q	I	V	V	K	I	T	D	Q	G	Y	V	T	S	H	G	D	H	Y	Gas36.pro
60	Q	I	S	A	E	E	G	I	S	A	E	Q	I	V	V	K	I	T	D	Q	G	Y	V	T	S	H	G	D	H	Y	Gbs36.PRO
57	E	V	S	K	R	E	G	I	N	A	E	Q	I	V	I	K	I	T	D	Q	G	Y	V	T	S	H	G	D	H	Y	Pneumo Sp36.PRO
		100	110	120																											
90	H	F	Y	N	G	K	V	P	Y	D	A	I	I	S	E	E	L	L	M	T	D	P	N	Y	R	F	K	Q	S	D	Gas36.pro
90	H	F	Y	N	G	K	V	P	Y	D	A	I	I	S	E	E	L	L	M	T	D	P	N	Y	H	F	K	Q	S	D	Gbs36.PRO
87	H	Y	Y	N	G	K	V	P	Y	D	A	I	I	S	E	E	L	L	M	K	D	P	N	Y	K	L	K	D	E	D	Pneumo Sp36.PRO
		130	140	150																											
120	V	I	N	E	I	L	D	G	Y	V	I	K	V	N	G	N	Y	Y	V	Y	L	K	P	G	S	K	R	K	N	I	Gas36.pro
120	V	I	N	E	I	L	D	G	Y	V	I	K	V	N	G	N	Y	Y	V	Y	L	K	P	G	S	K	R	K	N	I	Gbs36.PRO
117	I	V	N	E	V	K	G	G	Y	V	I	K	V	D	G	K	Y	Y	V	Y	L	K	D	A	A	H	A	D	N	V	Pneumo Sp36.PRO
		160	170	180																											
150	R	T	K	Q	Q	I	A	E	Q	V	A	K	G	T	K	E	A	K	E	K	G	L	A	Q	V	A	H	L	S	K	Gas36.pro
150	R	T	K	Q	Q	I	A	E	Q	V	A	K	G	T	K	E	A	K	E	K	G	L	A	Q	V	A	H	L	S	K	Gbs36.PRO
147	R	T	K	E	E	I	N	R	Q	-	K	Q	E	H	S	Q	H	R	E	G	G	T	P	R	-	-	-	-	-	-	Pneumo Sp36.PRO
		190	200	210																											
180	E	E	V	A	A	V	N	E	A	K	R	Q	G	R	Y	T	T	D	D	G	Y	I	F	S	P	T	D	I	I	D	Gas36.pro
180	E	E	V	A	A	V	N	E	A	K	R	Q	G	R	Y	T	T	D	D	G	Y	I	F	S	P	T	D	I	I	D	Gbs36.PRO
170	-	N	D	G	A	V	A	L	A	R	S	Q	G	R	Y	T	T	D	D	G	Y	I	F	N	A	S	D	I	I	E	Pneumo Sp36.PRO
		220	230	240																											
210	D	L	G	D	A	Y	L	V	P	H	G	N	H	Y	H	Y	I	P	K	K	D	L	S	P	S	E	L	A	A	A	Gas36.pro
210	D	L	G	D	A	Y	L	V	P	H	G	N	H	Y	H	Y	I	P	K	K	D	L	S	P	S	E	L	A	A	A	Gbs36.PRO
199	D	T	G	D	A	Y	I	V	P	H	G	D	H	Y	H	Y	I	P	K	N	E	L	S	A	S	E	L	A	A	A	Pneumo Sp36.PRO
		250	260	270																											
240	Q	A	Y	W	S	Q	K	Q	G	R	G	A	R	P	S	D	Y	R	P	T	P	A	P	A	P	G	R	R	K	A	Gas36.pro
240	Q	A	Y	W	S	Q	K	Q	G	R	G	A	R	P	S	D	Y	R	P	T	P	A	-	-	P	G	R	R	K	A	Gbs36.PRO
229	E	A	F	L	S	G	R	-	G	N	L	S	N	S	R	T	Y	R	R	-	Q	N	S	D	N	T	S	R	T	N	Pneumo Sp36.PRO
		280	290	300																											
270	P	I	P	D	V	T	P	N	P	G	Q	G	H	Q	P	D	N	G	G	Y	H	P	A	P	P	R	P	N	D	A	Gas36.pro
268	P	I	P	D	V	T	P	N	P	G	Q	G	H	Q	P	D	N	G	G	Y	H	P	A	P	P	R	P	N	D	A	Gbs36.PRO
257	W	V	P	S	V	S	-	-	-	-	-	-	-	-	-	-	-	-	-	-	N	P	G	T	T	N	T	N	T	S	Pneumo Sp36.PRO
		310	320	330																											
300	S	Q	N	K	H	O	R	D	E	F	K	G	K	T	F	K	E	L	L	D	Q	L	H	R	L	D	L	K	Y	R	Gas36.pro
298	S	Q	N	K	H	O	R	D	E	F	K	G	K	T	F	K	E	L	L	D	Q	L	H	R	L	D	L	K	Y	R	Gbs36.PRO
273	N	N	S	N	T	N	S	Q	A	S	Q	S	N	D	I	D	S	L	L	K	Q	L	Y	K	L	P	L	S	Q	R	Pneumo Sp36.PRO

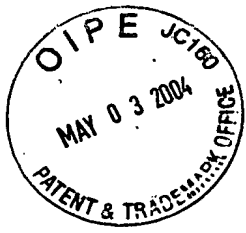


Figure 2(b)

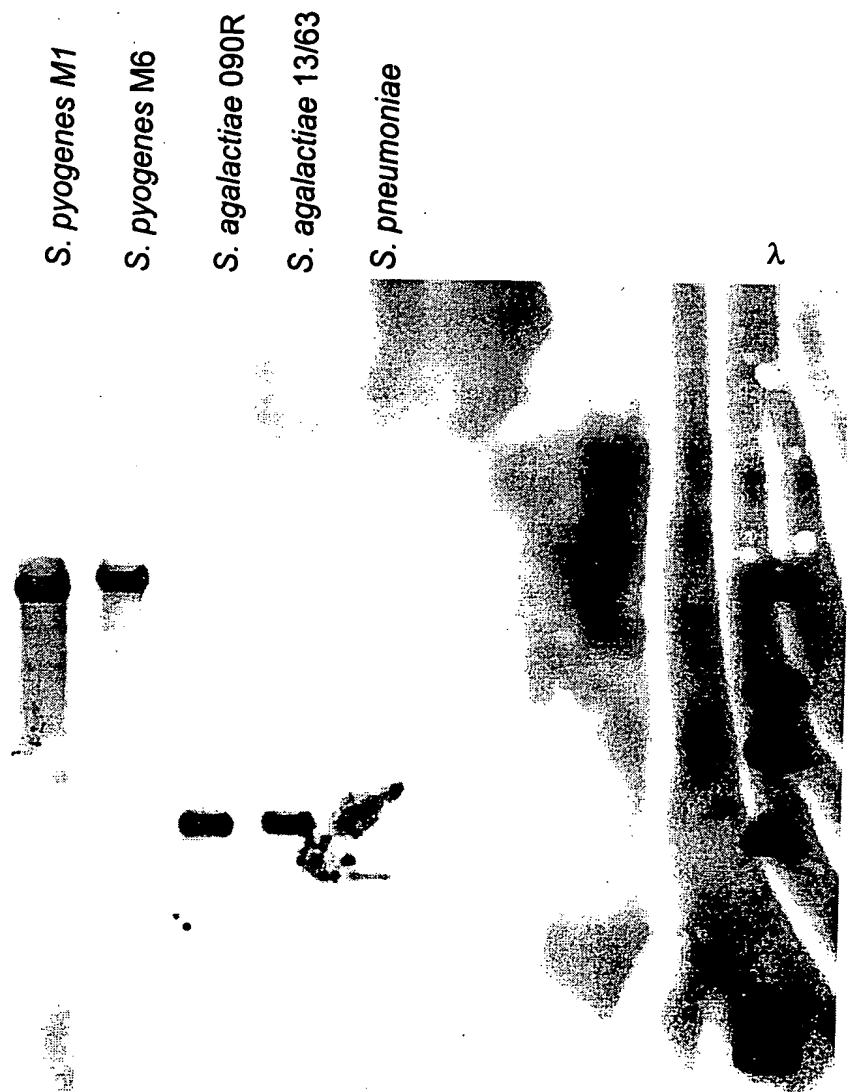
	340	350	360	
330	H V E E D G L I F E P T Q V I K S N A F G Y V V P H G D H Y			Gas36.pro
328	H V E E D G L I F E P T Q V I K S N A F G Y V V P H G D H Y			Gbs36.PR0
303	H V E S D G L V F D P A Q I T S R T A R G V A V P H G D H Y			Pneumo Sp36.PR0
	370	380	390	
360	H I I P R S Q L S P L E M E L A D - - - R Y L A G Q - - -			Gas36.pro
358	H I I P R S Q L S P L E M E L A D - - - R Y L A G Q - - -			Gbs36.PR0
333	H F I P Y S Q M S E L E E R I A R I I P L R Y R S N H W V P			Pneumo Sp36.PR0
	400	410	420	
383	T E D D D S G S I D H S K P S D K E V T H T F L G H R I K A Y			Gas36.pro
381	T D D N D S G S I D H S K P S D K E V T H T F L G H R I K A Y			Gbs36.PR0
363	D S R P E Q P S P Q P T P E P S P G P Q P A P N L K I D S N			Pneumo Sp36.PR0
	430	440	450	
413	G K G L D G K P Y D T S D A Y V F S K E S I H S - V D K S G			Gas36.pro
411	G K G L D G K P Y D T S D A Y V F S K E S I H S - V D K S G			Gbs36.PR0
393	S S L V S Q L V R K V G E G Y V F E E K G I S R Y V F A K D			Pneumo Sp36.PR0
	460	470	480	
442	V T A K H G D H F H Y - I G F G E L E O Y E L D E V A N W V			Gas36.pro
440	V T A K H G D H F H Y - I G F G E L E O Y E L D E V A N W V			Gbs36.PR0
423	L P S E T V K N L E S K L S K Q E S V S H T L T A K K E N V			Pneumo Sp36.PR0
	490	500	510	
471	K A K G Q A - - D E L A A A L D O E Q G K E K P L F D T K K			Gas36.pro
469	K A K G Q A - - D E L V A A L D O E Q G K E K P L F D T K K			Gbs36.PR0
453	A P R D Q E F Y D K A Y N L L T E A H - - - K A L F E N K G			Pneumo Sp36.PR0
	520	530	540	
499	V S R K V T K D G K V G Y M M P K D G K D Y F Y A R D Q L D			Gas36.pro
497	V S R K V T K D G K V G Y I M P K D G K D Y F Y A R Y Q L D			Gbs36.PR0
480	R N S D F Q A L D K L L E R L N D E S T N - - - K E K L V			Pneumo Sp36.PR0
	550	560	570	
529	L T Q I A F - - - A E Q E L M L K D K K H Y R Y D I V D T			Gas36.pro
527	L T Q I A F - - - A E Q E L M L K D K K H Y R Y D I V D T			Gbs36.PR0
506	D D L L A F L A P I T H P E R L G K P N S Q I E Y T E D E V			Pneumo Sp36.PR0
	580	590	600	
555	G I E P R L A - - - V D V S S L P M H A G N A T Y D T G S S			Gas36.pro
553	G I E P R L A - - - V D V S S L P M H A G N A T Y D T G S S			Gbs36.PR0
536	R I - A Q L A D K Y T T S D G Y I F D E H D I I S D E G D A			Pneumo Sp36.PR0
	610	620	630	
582	F V I P H I D H I H V V P Y S W L T - R D Q I A T I K Y V M			Gas36.pro
580	F V I P H I D H I H V V P Y S W L T - R N Q I A T I K Y V M			Gbs36.PR0
565	Y V T P H M G H S H W I G K D S L S D K E K V A A Q A Y T K			Pneumo Sp36.PR0
	640	650	660	
611	Q H P E V R P I - - - D I W S K P G H E E S G S V I P N V T			Gas36.pro
609	Q H P E V R P I - - - D V W S K P G H E E S G S V I P N V T			Gbs36.PR0
595	E K G I L P P S P D A D V K A N P T G D S A A A I Y N R V K			Pneumo Sp36.PR0



Figure 2(c)

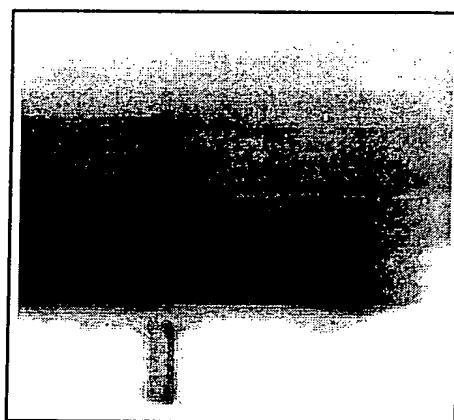
	670	680	690	
637	P L D K R A G M P N W Q - I I H S A E E V Q K A L A E G R F			Gas36.pro
635	P L D K R A G M P N W Q - I I H S A E E V Q K A L A E G R F			Gbs36.PRO
625	G - E K R I P L V R L P Y M V E H T V E V K N G			Pneumo Sp36.PRO
	700	710	720	
666	A T P D G Y I F D P R D V L A K E T F V W - K D G S F S I P			Gas36.pro
664	A A P D G Y I F D P R D V L A K E T F V W - K D G S F S I P			Gbs36.PRO
648	- - - N L I I P H K D H Y H N I K F A W F D D H T Y K A P			Pneumo Sp36.PRO
	730	740	750	
695	R A D G S S L R T I - - - - - N K S D L S Q A E			Gas36.pro
693	R A D G S S L R T I - - - - - N K S D L S Q A E			Gbs36.PRO
674	- - N G Y T L E D L F A T I K Y Y V E H P D E R P H S N D G			Pneumo Sp36.PRO
	760	770	780	
714	W Q Q A Q E - L L A K K N A G D A T D T D - K P K E K Q Q A			Gas36.pro
712	W Q Q A Q E - L L A K K N A G D A T D T D - K P E E K Q Q A			Gbs36.PRO
702	W G N A S E H V L G K K D H S E D P N K N F K A D E E P V E			Pneumo Sp36.PRO
	790	800	810	
742	D K S N E N Q Q P - - - S E A S K E E E K E S D D F I D S L			Gas36.pro
740	D K S N E N Q Q P - - - S E A S K E E - K E S D D F I D S L			Gbs36.PRO
732	E T P A E P E V P Q V E T E K V E A Q L K E A E V L L A K V			Pneumo Sp36.PRO
	820	830	840	
769	P D Y G L D R A T L E D H I N Q L A Q K A N I D P K Y L I F			Gas36.pro
766	P D Y G L D R A T L E D H I N Q L A Q K A N I D P K Y L I F			Gbs36.PRO
762	T D S S L - K A N A T E T L A G L R N N L T L Q - - - I M			Pneumo Sp36.PRO
	850	860	870	
799	Q P E G V Q F Y N K N G E L V T Y - - - D I K T L Q Q I N			Gas36.pro
796	Q P E G V Q F Y N K N G E L V T Y - - - D I K T L Q Q I N			Gbs36.PRO
787	D N N S I M - - A E A E K L L A L L K G S N P S S V S K E K			Pneumo Sp36.PRO
	825			Gas36.pro
825	P			Gbs36.PRO
822	P			Pneumo Sp36.PRO
815	I N			

**Figure 3**





**Figure 4**



Control

Sp36 GBS

Sp36

SJ2 6b



Figure 5A

VKKTYGYIGS VAAILLATHI GSYQLGKHHM GSATKDNQIA YIDDSKGGKAK APKTNKTMDQ ISAEEGISAE 70  
QIVVKITDQG YVTS~~HGDHYH~~ FYNGKVPYDA IISEELLMTD PNYR~~FKQSDV~~ INEILDGYVI KVN~~GNVYVYL~~ 140  
KPGSKRKNIR TKQ~~QIAEQVA~~ KGTKEAKEKG LAQVAHLSKE EVA~~AVNEAKR~~ QGRYTTDDGY IFSPTDIIDD 210  
LGDAYLVPHG ~~NHYHYIPK~~DD LSPSELAAAQ AYWSQKQGRG ARPSDYRPTP APAPGRRKAP IPDVTNPGQ 280  
GHQPDNGGYH PAPPRPN~~DAS~~ QNKHQRDEFK GKT~~FKELL~~DQ L~~HR~~LDLKYRH VEEDGLIFEP TQVIKSNAFG 350  
YVVP~~HGDHYH~~ IIPRSQ~~SPL~~ EMELADRYLA GQTE~~DD~~SGS D~~HSKPSDKEV~~ THTFLGHR~~IK~~ AYKGLDGKP 420  
YDTS~~DAYVFS~~ KESI~~HSVDKS~~ GVTAKHGDHF HYIGFGELEQ YELDEVANWV KAKGQADELA AALDQEQGKE 490  
KPLFDTKKVS RKVTKDGKVG YMMPKDGKDY FYARDQLDLT QIAFAEQELM LKDKKHRYD IVDTGIEPRL 560  
AVDVSSSLPMH AGNATYDTGS SFVIPHIDHI HVVPYSWLTR DQIATIKYVM QHPEVRPDIW SKPGHEESGS 630  
VIPNVTPLDK RAGMPN~~WQII~~ HSAEEVQKAL AGRFATPDG YIFDPRD~~VLA~~ KET~~FVWKDGS~~ FSIPRADGSS 700  
LRTINKSDLS QAEWQQAQEL LAKKNAGDAT DTDKPK~~EQQ~~ ADKSNENQQP SEASKEEKE SDDFIDSLPD 770  
YGLDRATLED HINQLAQKAN IDPKYLIFQP EGVQFY~~NKNG~~ ELVTYDIKTL QQINP 825



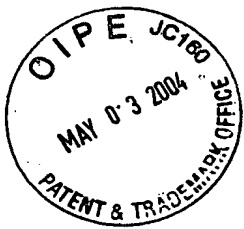


Figure 5B

MKTKKVIILV GLLSSQLTL IACQSRGNGT YPIKTKQSRK GMTSNKIKPI KKSCKTNKTH KGVAGVDFT 70  
DDGFILTKDS KILSKTDQGI VVDHGHSHF IFYADLKGSP FEYLIPKGAS LAKPAVAQRA ASQGTSKVAD 140  
PHHHYEFNPA DIVAEDALGY TVRHDDHFFHY ILKSSLSGQT QAQAKQVATR LPQTSSSLVST ATANGIPGLH 210  
FPTSDGFQFN GQGI VGVTKD SILVDHGHGL HPISFADLRQ GGWAHVADQY DPAKKAEPKPA ETHQTPELSE 280  
REKEYQEKLA YIAEKLIDP STIKRVETQD GKLGLEYPHH DHAHVLMUSD IEIGKDIPDP HAIEHARELE 350  
KHKVGMDTLR ALGFDEEVIL DIVRTHDAPT PFPSNEKDPN MMKEWLATVI KLDLGSRKDP LQRKGLSLLP 420  
NLETIGIGFT PIKDISPVLQ FKKLKQLLMT KTGVTDYRFL DNMPQLEGID ISQNNLKDIS FLSKYKNLTL 490  
VAAADNGIED IRPLGQLPNL KFLVLSNNKI SDLSPLASLH QLQELHIDNN QITDLSPVSH KESLTVVDLS 560  
RNADVLDLTL QAPKLETLNV NDTKVSHLDF LKNPNLSSL SINRAQLQSL EGIEASSVIV RVEAEGNQIK 630  
SLVLKDKQGS LTFLDVTGNQ LTSLEGVNNF TALDILSVSK NQLTNVNLK PNKTVTNIDI SHNNISLADL 700  
KLNEQHIPEA IAKNFPAVYE GSMVGNGTAE EKAAMATKAK ESAQEASESH DYNHNHTYED EEGHAHEHRD 770  
KDDHDHEHED ENEAKDEQNH AD 792



## Figure 5C

VKKTYGYIGS VAAILLATHI GSYQLGKHHM GLATKDNQIA YIDDSKGKVK APKTNKTMDO ISAEEGISAE 70  
QIVVKITDQG YVTS~~HGDHYH~~ FYNGKVPYDA II~~SEELLMTD~~ PNYHFKQSDV INEILDGYVI KVN~~GNYYVYL~~ 140  
KPGSKRKNIR TKQ~~QIAEQVA~~ KGTKEAKEKG LAQVAHLSKE EVA~~AVNEAKR~~ QGRYTTDDGY IFSPTDIIDD 210  
LGDAYLVPHG ~~NHYIYIPK~~ LSPSELAAQ AYWSQKQGRG ARPSDYRPTP APGRRKAPIP DVTPNPGQGH 280  
QPDNGGYHPA PPRNDASQN KHQRDEFKCK TFKELLDQLH RLDLKYRHVE EDGLIFEPTQ VIKSNAFGYV 350  
VPHGDHYHII PRS~~QLS~~PLEM ELADRYLAGQ TDDNDSGSDH SKPSDKEVTH TFLGHRKAY GKGLDGKPYD 420  
TSDAYVFSKE SIHSVDKSGV TAKHGDHFHY IGFGLEQYE LDEVANWVKA KGOADELVAA LDQEQGKEKP 490  
LFDTKKVSRK VTKDGKVGYI MPKDGKDIFY ARYQLDLTQI AFAEQELMLK DKKHYRYDIV DTGIEPRLAV 560  
DVSSLP~~PMHAG~~ NATYDTGSSF VIPHIDHIH VPYSWLTRNQ IATIKYVMQH PEVRPDVWSK PGHEESGSKI 630  
PNVTPLDKRA GMPN~~WQIIHS~~ AEEVQKALAE GRFAAPDGYI FDP~~RDVLAKE~~ TFVWKDGSFS IPRADGSSLR 700  
TINKSDLSQA EWQQAQELLA KKNAGDATDT DKPEEKQQAD KSNENQQPSE ASKEEKESDD FIDSLPDYGL 770  
DRATLEDHIN QLAQKANIDP KYLIFQPEGV QFYKNKGELV TYDIKTLOOI NP 822